

SMITH
Appl. No. 10/590,499
September 11, 2008

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 34-37 and 39-70 are in the case.

I. THE INTERVIEW

At the outset, the undersigned wishes to thank the Examiner (Dr. Zucker) for kindly agreeing to conduct a personal interview in this application. The interview was held on September 11, 2008, and was attended by Ms. Caron Brooke and Dr. Mark Roberts of the assignee corporation, as well as by the undersigned. The courtesies extended by the Examiner were most appreciated. The substance of the interview will be clear from the comments presented below.

II. THE OBVIOUSNESS REJECTIONS

Claims 34-40, 42-47 and 49-70 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Wegman *et al.* (US 6,521,783; 02-2003) (Wegman '783). Claim 41 stands rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Wegman and further in view of U.S. Patent 5,218,140 to Wegman (Wegman '140). Those rejections are respectfully traversed.

Prior to the interview, and in response to the Examiner's request, a copy of claim 34, amended to incorporate the subject matter of claim 38 (now canceled without prejudice), was forwarded to the Examiner for review prior to the interview. Amended claim 34 as presented herewith corresponds to amended claim 34 as forwarded to the

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Examiner for review. Claim 70 (the other independent claim in the case) has been similarly amended to include the subject matter of claim 38.

As discussed during the interview, claim 34 as amended claims a carbonylation process for the production of a carbonylation product. The process comprises contacting carbon monoxide with a feed comprising an alcohol and/or a reactive derivative thereof in the vapour phase using an heterogeneous heteropolyacid catalyst comprising one or more metal cations selected from Cu, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd and Pt. Water is added to the feed in an amount of at least 0.5wt%, and may be fresh water and/or recycle water.

Wegman '783 describes a two-step process in which, in step (a), synthesis gas (a mixture of carbon monoxide and hydrogen) is converted to methanol and/or dimethyl ether and, in step (b), the methanol and/or dimethyl ether is carbonylated to a carbonylation product. For step (a), the catalyst may be an alcohol synthesis and/or alcohol dehydration catalyst. If an alcohol synthesis catalyst is used, methanol is formed. If an alcohol dehydration catalyst is also used, methanol is dehydrated to form dimethyl ether and water *in situ*. In step (b), a carbonylation catalyst selected from solid super acids, heteropolyacids, zeolites and molecular sieves is used.

Thus, in Wegman, water is only present in the feed to the carbonylation reactor when both methanol and dimethyl ether are also present and is formed *in situ*. In contrast, it has been discovered according to the present invention that if a heteropolyacid (HPA) catalyst is used, the selectivity and activity of the HPA catalyst may be increased if water is deliberately added to the feed, either as fresh water or as recycle water. In this regard, attention is directed to the working examples in the

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present specification, and particularly Tables 2 and 3 on page 8 of the specification, where quite significant increases in product selectivity and conversion are demonstrated with the addition of water to the feed as compared to when no water is added. This addition of water to the feed is now reflected in the amendments presented for independent claims 34 and 70 of the present application. Wegman provides no disclosure or suggestion of the possible or potential advantageous effects of addition of fresh or recycle water in the carbonylation feed. The person of ordinary skill would therefore have not expected any benefits to be derived by adding water to the feed, let alone that the selectivity and/or activity of a heteropolyacid catalyst could be improved by adding water to the feed.

Based on the above, one of ordinary skill would not have been motivated to arrive at the claimed invention based on Wegman '783. A *prima facie* case of obviousness has accordingly not been generated in this case. Withdrawal of the obviousness rejection based on Wegman '783 is accordingly respectfully requested.

Referring to the rejection of claim 41 as allegedly unpatentable over Wegman '783 in view of Wegman '140, claim 41 is dependent, indirectly, on claim 34 and therefore incorporated the features of claim 34 which define patentable subject matter for the reasons discussed above. Claim 41 is therefore patentable for the same reasons as discussed above in relation to claim 34. Reconsideration and withdrawal of the outstanding obviousness rejections are accordingly respectfully requested.

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III. CLAIM AMENDMENTS

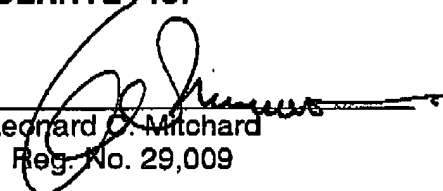
As noted above, claim 34 has been amended to incorporate the subject matter of claim 34, and claim 34 has been canceled without prejudice. Claim 34 as amended requires that water be added to the feed in an amount of at least 0.5wt%, and that the water added may be fresh water and/or recycle water. No new matter is entered and no new issues are raised. Entry and favorable consideration are respectfully requested.

Favorable action is awaited.

Respectfully submitted,

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By: _____


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